



## 7--ON CRACKT-HOOF AND ITS CURE, 2d Ed. Lond. 1834.

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THESE Cracks, or Splits, in the Hoofs of Horses are often cantly termed by the smiths *Sand Cracks*, and these fissures can happen to any part of the hoof, but it is the toe and sides of the hoof that they are seen more frequently to invade than the other parts.

In their commencement they are often very slight and superficial, not penetrating deeply into the substance of the hoof, in which case as they do not occasion lameness, or any ill consequences, they pass unheeded and scarcely are regarded, and may grow out of themselves; at other times, passing entirely through the thickness of the hoof, they permit the access of sand and dirt to the quick, and then produce grievous irritation, pain, and lameness. They are, on this account, usually called by stable-men, and others, *sand-cracks*, which, however, serves to convey a false notion, since the sand is in no respect the cause of the crack, but is simply occupying it after it has been formed by other causes. Some again affect to call those sand-cracks only, which happen to the pince, or front parts of the hoof, denying that appellation to those on the sides or quarters. As, however, such distinction appears to be frivolous and without any use, we shall consider all cracks of the hoof whatever as of the same nature, and arising from the same causes, and requiring the same general principles of treatment, and any such distinction, as it would only create unnecessary embarrassment and confusion, as best avoided. The French also in the same way appear to have called those in front of the hoof *La Soie*, and those on the sides *la seime*.

When these cracks have been injudiciously cut out and proper precautions not used to prevent their recurrence, they return with aggravated effects each time, and with a greater weakness of the part, and an increased difficulty of cure; their depth becomes greater, and the powers of union in the divided portions of the hoof less, and many then consider them almost or quite incurable. In cutting out the crack also with the drawing knife the quick is very subject to get injured by dips of the knife; in this case blood flows and obscures the operation, and fungous risings of the quick start up; and these, pinched in the crack by the working of the hoof, become troublesome to manage, and often create excessive pain and lameness. There is, however, a method of treating even these cases, that without much risk or trouble, ensures their cure, and also the perfect restoration of the hoof; and is recommended also by its simplicity, which we shall presently describe, first making a few remarks on the origin, nature, and appearance, of these cracks of the hoof.

It may be almost ever observed, that the nearer the crack is to the front of the hoof, the more direct and perpendicular its direction, and the more readily it penetrates the thickness of the hoof, following at this part the exact longitudinal direction of the fibre of the hoof; at least, such is its general appearance before it has been disturbed by the knife of the operator, the two broken surfaces meeting each other in equal union; whilst those on the quarters or sides of the hoof, which are generally about the middle or nearer to the heels than this, are more irregular in their course, sometimes oblique, transverse, or waving; and, at other times shelving under in such a way, as to meet the quick at a considerable distance from the external opening, or as though the hoof had been made of two tables, or layers, which had been separated.

The cause of this difference appears to be, that the horn at the quarters is more elastic and flexible than at the toe, and especially where it approaches the inflexions: and again, that these posterior parts lie more under the perpendicular pressure of the body than the toe does, receiving the weight obliquely. Hence if the horn of this part, from any cause,



becomes too dry and brittle it is subject to crack, and to be rent irregularly merely by the weight; hence we see these kinds of cracks most frequently in blood-horses, whose hoofs are thin and hard, whilst the other kind of crack, that is, the front crack, is more often seen with the cart and heavy draft-horses; the fibre of the hoof also towards the heels, being nearly in the transverse direction of the pressure, which is not the case at the toe, is the chief cause of the oblique irregularity of the crack.

Such things occur, though rarely, as horizontal or transverse cracks, both in front and sides of the hoof; the growth alone, however, is more apt to remove these, which makes them to pass almost unnoticed, whilst the longitudinal crack will continue to extend itself in spite of the growth in both directions.

The strongest hoofs of the cart horses are sometimes found split up in front, which one should be at a loss to account for from any natural cause. It almost always happens near the middle of the toe, as we have stated, and one should apprehend either that the strain in draft did this; or that the foot unevenly pared, or the shoe unevenly fitted to the wall of the foot, occasions one half of the hoof to take but a partial bearing upon it, the other wanting support, the violence of this partial exertion rends the hoof asunder, following the course of the fibre, we can also readily conceive, that the violence of the nailing and clenching up of the nails might also sometimes be a cause of this accident, by drawing the two halves of the hoof in opposite directions upon an ill fitted shoe: and although the strongest hoofs are sometimes seen thus divided, yet the weaker, wrinkled, thin, and as the smiths call them, *shelly hoofs*, are the most frequent sufferers from this cause. A clip to the shoe at the pince, such as is very usually given to draft-horse shoes, hammered down too violently upon the hoof in front, and which is ordinarily done without any measure or guide in respect to its degree, will also press upon and split the hoof in some cases. We have indeed often seen the coffin-bone, after death, fairly impressed with a concave mark, the effect of this undue pressure from the clip, and which could not but have been attended with more or less pain, according to the degree of violence that had induced it.

A tread also upon the coronet from the caulkin of another horse, or from another foot of the same horse, by disordering the coronet, will produce a weakness in the horn growing from that part, and thus induce a sand-crack in any part whatever of the hoof, and which also is not a very unfrequent cause of them.

There is yet another and more simple source of these cracks than any we have yet described, and which is, perhaps, the most frequent of any, viz. that a natural want of moisture or succulence in the hoof; or the same deficiency artificially induced by the fever which is constantly attending the shoeing, shall occasion a small cracking of the external shell or cuticle of the hoof; a minute and almost imperceptible fissure is thus formed which gradually admitting air to the interior of the hoof; and from this part of the hoof being more succulent in its nature than the external hard shell, dries, consequently contracts, and in contracting extends the crack in both directions till it meets the quick. The dryness of the stable also, the summer heats, or the winds of March, will especially facilitate this process. And as these small cracks extend, they in more or less time, as they happen to be favoured by these circumstances, will at last reach the quick, and the consequences ensue which we have above described. The weight also and movements of the horse, after a certain time, the hoof becoming too weak to sustain them, will tend to complete the fissure and carry it to the quick.

If the fissure at its commencement has been low down the hoof, or has been retarded in its extension by the opposite circumstances to the above, as by the wet seasons, or the application of moisture, &c., it may be carried out by the growth naturally, and no ill consequences ensue, and which may be called the simplest state of the disorder.

*In respect to the cure*, it is at present usual to cut out these cracks with a drawing knife, and then to fire them afterwards with a red-hot iron; this certainly melts the hoof together, and closes for a time the crack; it however generally rends again, for the scorched and burnt horn is much more brittle afterwards, and disposed to rend, and the crack to return, especially if left to the air uncovered, which it too often is. The violent inflammation also, in the parts beneath, induced by the firing, cannot be attended with any very beneficial conse-

quences in these firings; and the parts shrink afterwards, and render the cure much more tedious and difficult, and this, according to the degree of heat that has been employed, which is ever attended with a loss of substance and an absorption in the vascular parts.

Now the most perfect exclusion of the air from the crack in incipient cases, is all that is really necessary for a perfect cure, and a restoration of the hoof; that is, the crack, unable under these circumstances to extend itself, grows out: it is necessary therefore for us to continue and persevere in this measure till it be near or quite at the bottom of the hoof, and three months or four will generally be sufficient to renew any hoof from top to bottom.

The ointment which we have used with the greatest success in these cases for excluding the air, is made of tallow, wax, and tar; to equal parts of the two former ingredients, a sufficiency of tar is added to give it a tenacious consistence: this smeared over the hoof forms a good defence against the drying effects of the air, and is infinitely better than oils, which appear to sink in and to inflame the foot. This ointment should be well pressed into the crack, and also be spread on leather or on linen, or on pledgets of tow, and tied over it. In other cases, where the application of ties might be inconvenient, or might not be desirable on account of the appearance, we have formed a very adhesive, tenacious mass to fill up a channel or vacuity in the hoof, by melting together equal parts of common turpentine and of bees wax, with a sixth part of tar to colour it; and for dealers or others who may wish to conceal small defects such is particularly well suited.

From the simplest manner of a crack, we shall now proceed to consider the treatment of a worse case, where the quick is exposed to the irritation of foreign bodies. Here the crack must be fully exposed with a drawing knife till these particles can be reached and washed out; washing afterwards the wound with tincture of myrrh, and then applying a pledget of *turpentine* or rather of *resinous digestive* over it for a few days, perfectly to exclude the air as above described till the hoof has grown out entire, or has formed so strong a shoot of horn at the coronet that it shall remove any suspicion about its future security.

In a very old crack, ill treated by firing, it will be found, that an impression or channel has been made in the coffin-bone itself, which may be observed by macerating the bone after death; and the crack being deeper therefore, is with much more difficulty got at without wounding the quick rising on either side, and the effusion of blood serves to obscure and prevent the operation. The best proceeding in such a case is, to rasp the hoof under the coronary ring, crosswise, with a broad half-round wood rasp as deep as possible without actually inducing a flow of blood, which in all operations of the hoof should be carefully avoided, as it obscures the parts to be cut, and makes the process more difficult and uncertain; and then as the quick on either side is higher than the bottom of the crack, when the rasp can no longer be used a fine small drawing knife best completes the excision of the fissure, applying the dressing and a bandage, and keeping it covered as above described. But if, however, as is sometimes the case, it be so deep and so surrounded with living parts that it is next to impossible to obliterate it without wounding these parts by dips of the knife, it is then best to cover up the foot in the dressings, and to wait for a week or more, under these circumstances, when it will be found that the growth has now rendered the perfect excision of the fissure a matter of no great difficulty. After a time a knob of horn usually proceeds from the coronet following this operation, and which effectually prevents the return of the crack, if it be kept thoroughly moist, and smeared continually with the unguent during the whole time of its growth downwards.

Where the crack, from being of a very long standing, and much fired, has no powers left of union, or when united it breaks up again, as when also they persist in using the horse, then, under such untoward circumstances, it will be necessary to thin and remove the hoof to a considerable distance from either side the crack, so as to render all as thin as possible; that the play of the hoof, that is, the unequal movement of its two portions, shall not in any manner interrupt, break up, or disturb, the new growth that is forming entire at the coronet, taking care to keep the parts all the time well covered up from the air.

And in the very worst cases that can well occur, as where by long neglect, firing, and other means, the parts have been so much injured by bad operating that numerous funguses have arisen in the crack with extreme pain, it is then preferable to operate in the following way:



Clear away the horn to a certain distance on each side of the crack, reducing it as thin as possible with the rasp and the drawing knife, then pass a scalpel longitudinally through to the elastic processes, and with a pincers elevate the thin strip of horn and draw or tear it off upwards, at the coronet. By this means we sever the old and diseased part from the new forming horn, and then the new shoot being entirely separated from the old connexion makes a more vigorous push, and being well sustained and kept from drying it grows out entire and pushes the crack out: this being done on either side the crack, the funguses being no longer irritated by the contact of hard edges of horn are easily managed, and the growth soon fills up the space with new horn. In lesser cases this, although a certain and ready way, is not advised, being not only extremely painful, but the elastic processes so disturbed are never afterwards, we believe, perfectly re-produced; we should however have left this account of sand-crack very imperfect if we had omitted to speak of these fungous elevations of the quick, which to manage are often much more troublesome and difficult, and requiring more address, than the crack itself. Compression in some cases will do, but excision in general is best, with moderate compression afterwards; the edges of the horn surrounding and irritating them being carefully removed and kept away.

If these funguses are not well removed or brought to a correspondent state to the horn that is growing over them, they do not kindly unite with it, and a disease of the most singular kind is produced, and which has hitherto, we apprehend, never been named or described. It is a morbid kind of horn that is formed, of a yellower cast than the natural horn, and is partaking of the structure and appearance very much of the funguses growing from trees or the boletus; now the natural horn grows over this, and presses down against the quick, and will occasion if neglected severe lameness.

Pricks by nails injuring the coffin-bone will also occasion formations of the same sort; and this *Rib of bastard horn*, as it grows down along with the other horn, widening as it descends, sometimes forms a cone whose apex is the point of the original injury. The cure of this, which if not understood, as was the case in our earlier practice, is truly troublesome; and nothing less than the total extirpation and removal of all the horn above and about the morbid rib, and the plucking it out entirely will effect the cure, for it will return again and again if the smallest portion of it be left. The horn also that first forms after a bad injury of the coffin bone will often produce this sort of bastard growth which should be carefully removed, and it is also necessary to pare away the first growth of the new horn, and to keep it from being too rapidly covered and carried down by the growth from the coronet. The French have since described this disease under the term *Kera-phyl-locele*! It is not, however, often attended with a *kele*, or sac, or abscess, as far as we have observed.

If the horn be much thinned opposite the ramification of an artery, at its egress from the coffin bone, of which there are several that pass through the bone, even without the fetching blood, the artery shall push through, and so dilate its thin casing as to become a troublesome fungus. An iron moderately hot, and pressure after it by a knot of tow smeared with tar, will generally reduce this, and keep it from being mischievous till a growth of thicker horn covers it; some discretion may however be necessary, not to employ the iron too hot, so as to open the vessel or inflame the parts beneath, and precise directions are difficult in a point requiring some delicacy and judgment, where not burning so much as extreme dryness is wanted. When, however, a sound knob of horn is once formed at the coronet, care should be taken that the crack be fairly obliterated below, otherwise in growing down it may grow over it falsely, and form it into a *bastard rib*, and it may again break out: the management of it is somewhat tedious, and requires care; but by often thinning the horn, and using gentle pressure till the crack is wholly obliterated, avoiding blood or drying it by the iron, and keeping all covered, it will get well.

In concluding, it may not be useless advice also, as a prevention, to forbid the smith to rasp away or touch even the external covering or cuticle of the hoof after shoeing, which they are very apt to do, to give it a clean and new appearance, and thereby to remove its natural coat and best defence, exposing it to dryness and to cracking. Also the groom should often wet the feet if too dry and feverish, and keep them clothed with wet

rags, or apply some sebaceous unguent, to prevent the atmosphere from robbing them too rapidly of their moisture. The oil-can is commonly resorted to by the grooms for this purpose, using the rancid oil they clean their bits and harness with; and though this may be better than nothing at all, yet it is, however, subject to the strong objection we formerly mentioned, of sinking into the horn instead of remaining upon it, and of thus producing heat and inflammation of the foot, which the animal fats or wax are not, we believe, nearly so subject to do.

The shoeing also is greatly facilitated when the hoof is kept of a proper degree of flexibility and toughness, instead of that dry, hard, and brittle condition in which it is so often found, and which renders it the more apt to split with the nails, and to produce other mischiefs by turning and obstructing them.

The perspiration, we may remark also, is passing off in surprising abundance and rapidity, even through the dryest hoofs, as may be seen by letting a horse place his foot on a cold metal plate, the perspiration is soon collected in drops upon the plate, so that its quantity in a given time can be readily ascertained; and also whether these artificial coverings increase or diminish the quantity, and what other circumstances it is attended with in respect to the feet and their condition.

For the conveniently operating on the hoof, a half-round wood rasp is of primary necessity, also a case of drawing knives kept sharp, and a pen knife blade in a handle, are useful tools, and will render the process of the excision of cracks and fungi much more pleasant and effectual. It is, however, singular that in France to this day (1818, 1st. ed.) they have not adopted our useful instrument the drawing knife, as my friend, Professor Huzard, informs me, but constantly use a straight edged knife. Of late, however, they have resorted to it, and do most cruelly cut and denude the furch with it.

Turning to grass during the outgrowing of a sand-crack has been much and justly extolled; it is, however, only beneficial from the rest and moisture it brings to the hoof; which wetting artificially, by plunging the foot with its dressings in a bucket of water occasionally, will, when the above precautions are used, serve pretty much the same purpose; since it often happens that the horse cannot, without great inconvenience, be spared to go out to grass, or the time of the year may also forbid it.

Now as the well-being of the feet is of the first importance to horses, and as nothing can go on well if they are amiss, so we shall hardly apologise for the length which this narrative of the disease has drawn us into: for these matters have never yet, we believe, been very clearly stated to the public, and length of narrative does not always infer prolixity; we may also safely aver, that no crack we ever met with, however difficult, but has yielded to the above measures. Yet how many thousands are, even now, continually lost with this complaint here, and especially on the continent?

*In conclusion, we also observe that this Account of the Crackt Hoof was originally written for Rees' Cyclopædia.*



## 8—ON QUITTOR, AND ITS TREATMENT.

*Second Edition. London, 1834.*

Having had considerable experience in this severe and painful disorder, I have been induced to add some account of it to the others on the foot, which, perhaps, may tend to save the animal much unnecessary suffering, for it is often treated in the most cruel and bungling manner by the shoeing smiths, and months, nay whole years, have been sometimes consumed in attempting the cure, and in vain, after the most excruciating tortures have been inflicted to no purpose, destroying the organization of the foot, and rendering the cure impossible, even in the most intelligent hands. They have often by corrosive sublimate laid open the joint, when the animal must necessarily die of irritation; Crude Oil of Vitriol also and butter of antimony were among their favorite nostrums, and sometimes, with better reason, if cautiously employed, the actual cautery.

Their practice has served to remind me of Vegetius's language in the fourth century, when the knowledge of medicine was indeed very low, and a metaphor often supplied the place of fact and observation, where he says, "Bitter disorders require bitter remedies," *morbi quoque, quos superius nominavimus amari sunt, et non nisi amaris portionibus superantur.*" Lib. 3. p. 164, thus endeavouring to illustrate the matter by abstract and inapplicable allusions instead of adhering to the real facts of the case.

The most frequent source of this disease of quittor is the horse treading himself with the sharp calkins of his shoes, or, perhaps, from the tread of another horse by injudicious and over hasty turning and not letting him have time to place his feet, also his being too rudely and hastily backed, this relates however chiefly to the hind feet, though in frosty weather the fore shoes being turned up, it may then happen to them. The Calkins should never be made otherwise than very obtuse and blunt on this account, for they are too useful to the animal to be omitted, and are rarely dangerous if properly made and used. To those who may have any alarm on their account we would recommend attention to the caulkin curled round, seen in plate 6, fig. 3, of the work on Expansion Shoes, which can do no harm even with the most indiscreet.

Another frequent cause of these affections is, the prick of a nail in the shoeing, which may reach the cartilage primarily, or by a subsequent process of abscess, will injure the cartilage and produce the disorder.

Also a crackt-hoof ill treated shall be a source of it. For the disease consists in the injured cartilage, which part possessing only a very low degree of vascularity, and of the powers of life or of resuscitation, successive pieces die, and slough away, which requiring considerable time for such process makes the cases often very tedious. A discoloration of the cartilage from white to a green color precedes the sloughing, and the dying or dead portions acting as foreign bodies, the healing if the sore is thus prevented, till these be removed; a small irregular sinus, often of considerable depth and very tortuous, is leading down to the diseased portion, and the opening externally is oozing forth a limpid, or sometimes a thick white pus.

The French call this disease the *Javart cartilagineux*; and when the injury only extends to the integuments, it is called by them *Javart encornée*; and by us simply a *Tread*, which the shoeing smiths in curing often make their boast of having cured a Quittor, and at one dressing. It is worthy of remark, that this disease is not to be found among the diseases enumerated by the Ancients, and is evidently therefore one of the multifarious evils which has been introduced by the modern shoe.

The Farriers to cure it, ram the sinus full of sublimate, or other corrosive matter, which destroying all the parts adjacent, they slough out in a round mass or button, and this they call "*coreing it*;" but the sinus being often very deep, narrow, and irregular, their remedy fails of coming at the diseased part, and if it did, it was uncertain of having the full effect,

and not succeeding, the animal was put to the excruciating pain of frequent repetitions of this proceeding often till the side of the foot was nearly eaten away and destroyed, and the consequences which have ensued we have before described.

After many a distressing conflict with this disorder, I have to state from late experience, in several bad cases which I have cured, that if all the circumstances here about to be recommended are judiciously complied with, it may generally be cured in a few weeks. For this purpose, the animal must be cast upon some straw and the foot be properly secured with a spare cord, then with a rasp first, and afterwards a sharp drawing knife, remove the horn very extensively to perfect thinness, from all the parts adjacent to the injury; for the pressure of these it is that aggravates and keeps up the irritation, and occasions the death of so many successive portions of the cartilage, and renews the disorder; but the horn being thinned, so that a scalpel can freely pass through it, remove at once by a rapid cut, not by shaving thin slices, which in pain is equal to so many successive operations, a dense piece of the hoof, cutidura, and skin of the coronet, as large as a crown piece, which parts with the subjacent cellular membrane will be found enlarged and thickened over the abscess; the sinus will then distinctly appear, and a probe shows its direction and depth: take out as much of it as a scalpel can conveniently command, then slit up the remainder with a crooked bistoury, next inject it with a strong solution of Sulphat of Zinc, (two drams of the salt to an ounce of water,) afterwards apply to the wound a pledget of tow thickly smeared with resinous digestive,\* the tow being previously dipt in water, and this is to be kept on with a calico bandage, and then over the whole a large potatoe or bran poultice kept soft by grease. A copious flow of blood generally takes place on releasing the foot, but it coagulates after awhile and stops of itself, and the loss of a little blood from the coronary vessels is not at all injurious, we have thought, but, on the contrary, rather beneficial to its healing.

The poultice, may be thought by the inexperienced slightly of, but should with great care be especially continued the whole time of the cure; it keeps the foot moist, and the horn supple and easy, and free from irritation and pressure so inimical to the cure; in this way much pain will be saved, and the cure be ensured in a general way in a short time.

That I may render justice to those from whom I have derived any hint, I may here observe, that the utility of white vitriol in Quittor cases was first pointed out to me by my friend Charles Newport, of Gray's Inn Lane, London, whose father, he informed me, was in the habit of employing it. I extended its use to other cases of Sinuses, and to broken surfaces and abscesses where union was desirable, and find it a medicine of inestimable value; and I have thought the use of a poultice over it after its exhibition has increased its good effects. In some cases, I have used the *Conglutinum*, for so I call it, without any operation with the knife, and it has succeeded, if well forced in; in others, a great swelling and heat of the foot has taken place on the closing up of the sinus, and it has burst out in two or three new places, but by continuing the poultice and injection, these have perfectly healed: in others again, the use of the knife has become necessary, perhaps from the injury being more tortuous and deep, and situated nearer to the thickened insertion of the cartilage into the bone.

Some may be curious to know the origin of the term, Quittor, which I apprehend to be a barbarous corruption of the word *Twitter*—a disease of the human nail; but as the name appears in this corrupted state to afford us a useful and distinct specific name, I retain it. *Chondromalum* or *Chondromal*, would be a more scientific and proper term for it, for technical use, from *Chondros*, cartilage, and *Malum*, disease, or mischief.

A stout nob of horn generally follows the growth, where the *cutidura* has been much disturbed, which requires sometimes to be kept thinned, to prevent too much pressure on the subjacent parts, and its surface also smeared with hoof-ointment, to render it more supple and prevent its getting too dry and hard; the advancing edges of horn leading into the sore also require sometimes to be kept thinned in order to their union, and to prevent irritation upon the sore.

\* See Pharmacopoeia Equina, 3rd ed. p. 36.



A most beautiful provision of nature that as far as I know has not before been noticed, takes place on the removal of the horn of the hoof and exposure of the parts beneath, which will then swell up and become tumid, and assume the appearance of a fungus, sometimes dry, and at others oozing out a sort of milky serum if neglected.

This swelled part appears to be the *reticulum* chiefly and the *podophylla*, which in thus rising, often meet the edges of the surrounding horn, and the laxity of the parts appears to prevent a ready healing of the sore, but if pressure be applied to this fungoid appearance it is partially reduced to its natural dimensions, and then a healthy secretion of horn soon covers it, but if the edges of it any where meet the old horn, or that they are not brought as nearly as may be into the same state of thinness, they will not unite kindly, for this effect it is necessary at times as in old cases to reduce the old horn to a soft flexible state all round the sore.

In recent cases after the fungoid reticulum has extended itself it will quickly cover with a thin coat of horn, sufficient to keep down the rising fungus, and confine it within due bounds, and by a little preparation of the old horn they may be made readily to unite, and the horn from the cutidura coming down of its full depth and force from the coronet will carry every thing out before it, and renew the hoof entire.

It appears therefore that this singular mode of procedure in these parts by swelling, prevents, in a wonderful manner any pinching or severe compression which would have taken place had the new horn formed at once on these tender parts unenlarged, and have subjected them to restraint and irritation, but by this means room is obtained, and this effect is obviated. Perhaps, the *reticulum* is constantly exerting some degree of elastic force against the inclosing horn, at least it evidently assumes this action when exposed, and perhaps, especially when inflamed, thus usefully creating full room and a freedom from restraint during the new growth.

The first shoe that is put on after, or during the cure, should have a vacuity made in its upper bearing surface, opposite the quarter diseased, that no pressure should take place there, or near it, to incommode the cartilage. In this way these dreadful cases may be in a general way cured, and without very much suffering; in the last age they were often deemed perfectly incurable, and, indeed, in many parts of England they are so considered at this day.





Fig. I.

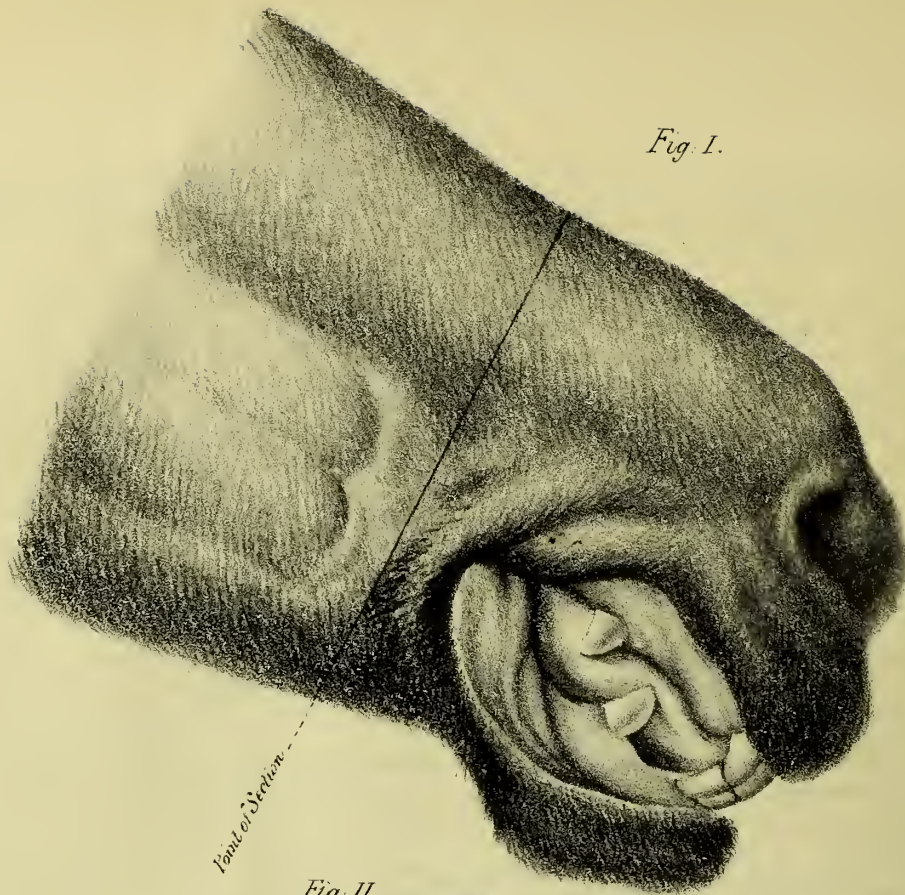
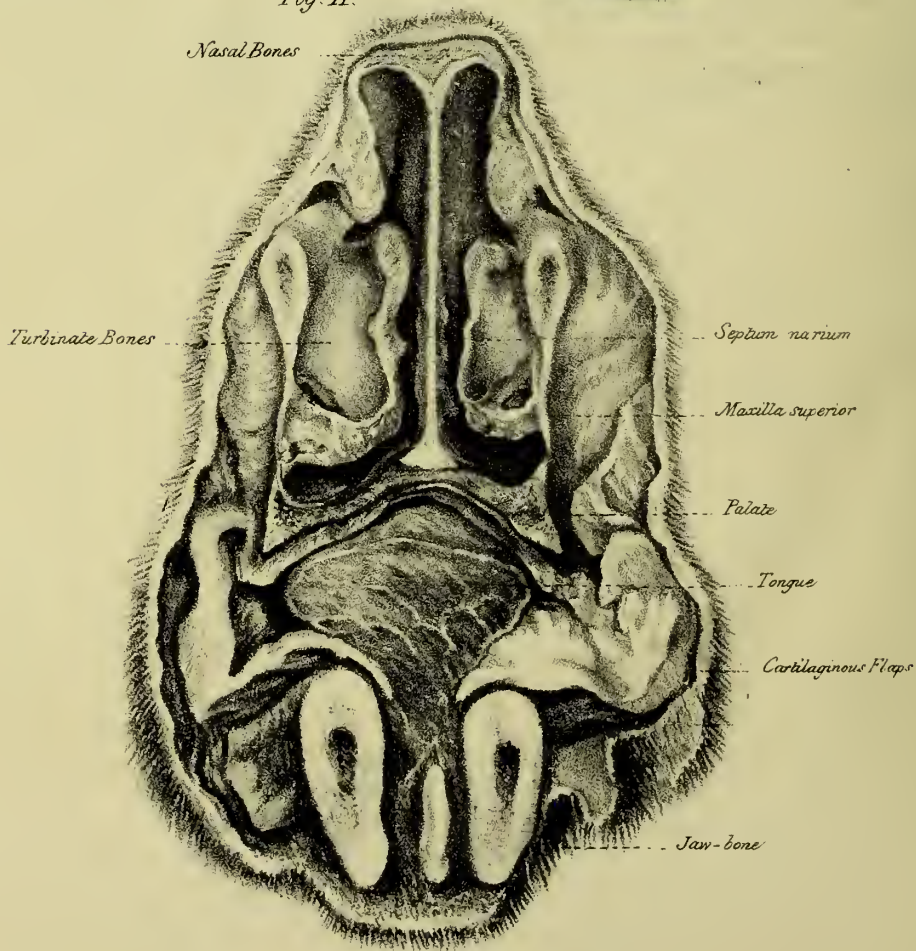


Fig. II.



*A View of the form, relative magnitude, & situation of the Jaw-bone, Tongue, & Flaps, &c.*